

THREE NEW SPECIES OF *BRUEELIA*
(MALLOPHAGA: PHILOPTERIDAE) FROM
THE MIMIDAE (AVES: PASSERIFORMES)

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Abstract.—Three new species of *Brueelia* from the Mimidae are described: one from *Oreoscoptes montanus*, one from *Toxostoma dorsale dorsale* and one from *Mimus polyglottos polyglottos*. A key is provided for their separation.

Of the 130 species of *Brueelia* recognized by Hopkins and Clay (1952, 1953, 1955), none have been described from the Mimidae. The present paper concerns the *Brueelia* from this host family and is a step toward a comprehensive review of the entire genus. Thus far, Ansari (1956, 1957) and Williams (1981, 1982) have revised the species found on the Corvidae and Meropidae, respectively. For a synonymy of the *Brueelia*, see Williams (1981).

This study deals with Mallophaga collected from 12 of the 35 recognized species of Mimidae. Gruson (1976) and A.O.U. (1957) were used for the nomenclature of the hosts.

In the following "Dimensions" sections, the numbers following each character represent its range, sample size, mean and standard deviation in mm. The "abdominal width" is the measurement of the widest abdominal segment which is the fourth, except for male *B. polyglotta*, where it is the fifth.

Abbreviations for the location of the collections are BM(NH) (British Museum (Natural History)), UU (R. E. Elbel Collection, University of Utah), NMNH (National Museum of Natural History), and EEM (K. C. Emerson Entomology Museum, Oklahoma State University).

The *Brueelia* from the Mimidae share the following characteristics with those from other hosts: ventral marginal carina interrupted medially, filiform antennae, prothorax small with lateral margins slightly concave, pterothorax broader than long with sides diverging and posterior margin evenly rounded, with tergal plates III and IV of the female separated medially.

Key to the *Brueelia* from the Mimidae

1. Setae on posterior edge of pterothorax (lateral to median) usually seven in number (four short, three long) in S-L-S-L-S-L-S pattern *montana*
- Setae on posterior edge of pterothorax (lateral to median) usually seven in number (one short and six long) in a S-L-L-L-L-L-L pattern 2
2. Male genitalia narrow with two sensilla on each side of mesosome and distal edges of mesosome with ridges. Parameres elongate. Margin of vulval plate usually with eight setae of equal diameter on each side, three above and five below *dorsale*
- Male genitalia broad with two sensilla on each side of mesosome and distal edges of mesosome smooth. Parameres blunt. Margin of vulval plate usu-

ally with 13 setae on each side, nine of wide diameter above four slender ones *polyglotta*

Brueelia montana, new species

Figs. 4-6

Type host.—*Oreoscoptes montanus* (Townsend).

Brueelia montana is distinguished from other *Brueelia* species of the Mimidae in having four short and three long setae on the posterior margin of the pterothorax (lateral to median) in a S-L-S-L-S-L-S pattern. The male genitalia closely resemble that of *B. dorsalis* n. sp. but differs in being more narrow in the portion of the basal plate anterior to the parameres.

Diagnosis.—Thimble-shaped head; ventral marginal carina interrupted medially; dorsal marginal carina complete but indented medially; no dorsal anterior plate; antennae filiform and similar in both sexes; prothorax small with lateral margins slightly concave; pterothorax broader than long with sides diverging and posterior margin evenly rounded; abdomen elongate-oval, with tergal plates I-VII of male and female separated medially; male genitalia with slender basal plate; parameres narrow and short with proximal head simple; mesosome shield-like with two sensilla and ridges on distal edge; female vulval plate usually with seven setae of equal diameter on each side, three above and four below.

Dimensions.—Male: Total length, 1.39-1.71 (5:1.55 ± 0.1468); head length, 0.32-0.39 (5:0.36 ± 0.0324); head width, 0.25-0.34 (5:0.30 ± 0.0418); prothorax width, 0.16-0.20 (5:0.18 ± 0.0200); pterothorax width, 0.24-0.35 (5:0.30 ± 0.0482); abdominal width, 0.32-0.45 (5:0.39 ± 0.0638).

Female: Total length, 1.66-2.05 (18:1.87 ± 0.1070); head length, 0.34-0.52 (18:0.40 ± 0.0377); head width, 0.28-0.37 (18:0.33 ± 0.0320); prothorax width, 0.17-0.22 (18:0.20 ± 0.0196); pterothorax width, 0.27-0.34 (18:0.32 ± 0.0216); abdominal width, 0.36-0.51 (18:0.45 ± 0.0428).

Material Examined.—Holotype ♂ and allotype ♀ from *Oreoscoptes montanus*, Ditto Dunes, Tooele Co., Utah, May 1969 (coll. E. and E. Branch, Dugway Proving Grounds), UU collection No. EE09054, deposited in NMNH; paratypes 2: ♂♂ 7 ♀♀, with same data; 2 ♀♀, with same data except No. EE09107; 1 ♂ 4 ♀♀, *O. montanus*, Vernon, Tooele Co., Utah, UU; 2 ♂♂ 5 ♀♀, *O. montanus*, N. Skull Valley, Tooele Co., Utah, UU.

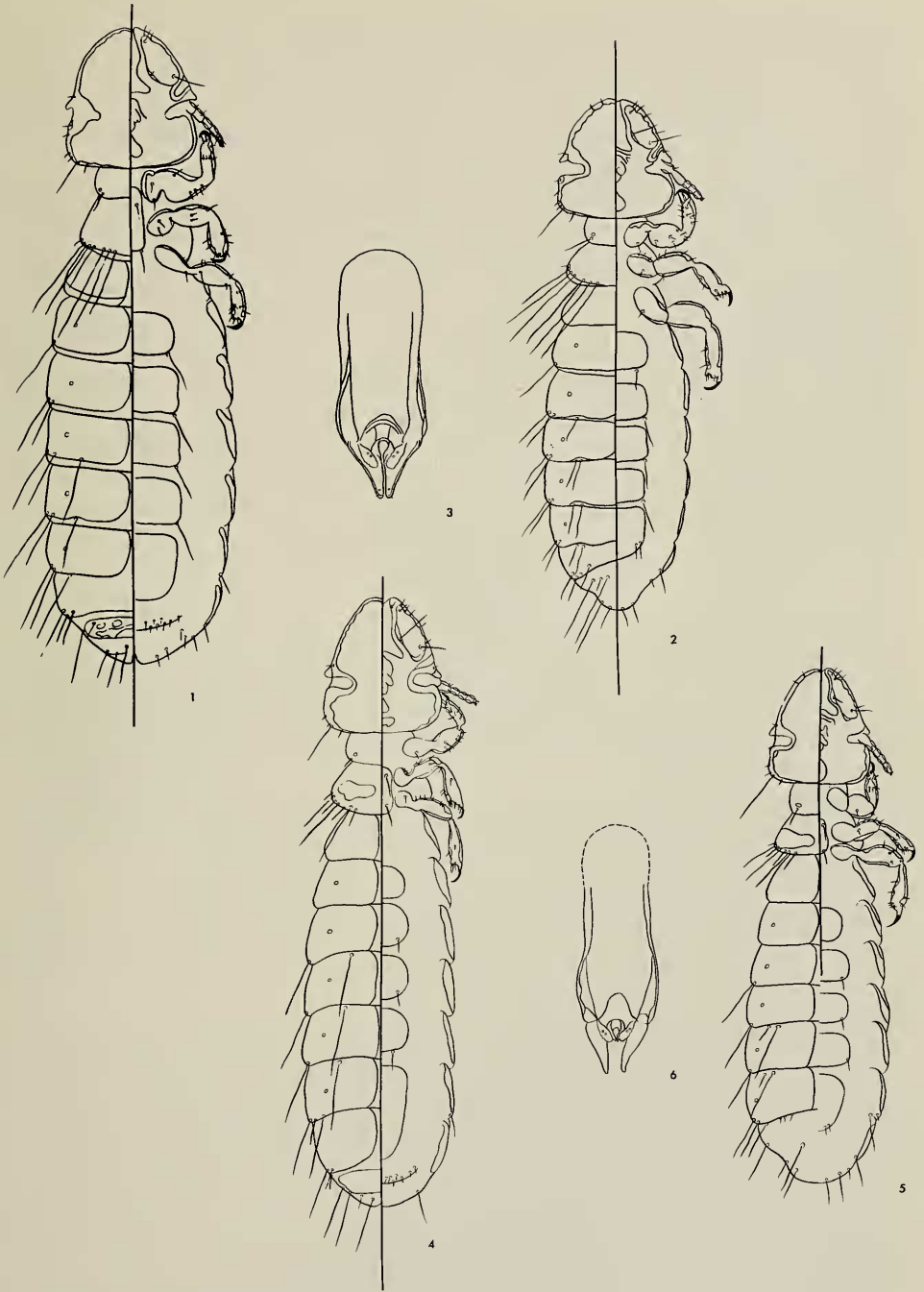
Brueelia dorsale, new species

Figs. 1-3

Type host.—*Toxostoma dorsale dorsale* Henry.

This species is distinguished from *B. montana* to which it is otherwise similar by pterothorax setation, by features of the male genitalia and female vulval plate and the shape of the head. The posterior edge of the pterothorax with one short and six long setae on each side. The male genitalia of *B. dorsalis* are narrow and have mesosomes with ridges on the distal edge. The margin of the vulval plate of females usually has eight setae of equal diameter on each side. The heads of both sexes are broadly triangular with a flattened anterior edge.

Dimensions.—Male: Total length, 1.50-1.78 (38:1.64 ± 0.0619); head length, 0.36-0.42 (38:0.38 ± 0.0113); head width, 0.35-0.39 (38:0.37 ± 0.0094); pro-



Figs. 1-6. 1-3. *Brueelia dorsale*: dorsal and ventral views of (1) female and (2) male, and (3) male genitalia. 4-6. *Brueelia montana*: dorsal and ventral views of (1) female and (2) male, and (3) male genitalia.

thorax width, 0.19–0.22 (38:0.20 \pm 0.0086); pterothorax width, 0.31–0.37 (38:0.33 \pm 0.0126); abdominal width, 0.48–0.55 (38:0.52 \pm 0.0238).

Female: Total length, 1.47–2.10 (63:1.91 \pm 0.1318); head length, 0.38–0.43 (63:0.41 \pm 0.0094); head width, 0.37–0.45 (63:0.40 \pm 0.0117); prothorax width, 0.20–0.26 (63:0.23 \pm 0.0095); pterothorax width, 0.32–0.41 (63:0.37 \pm 0.0142); abdominal width, 0.48–0.64 (63:0.58 \pm 0.0291).

Material Examined.—Holotype δ (second specimen from the left as seen with compound microscope) and allotype φ (first specimen from the right with compound microscope) from *Toxostoma dorsale dorsale*, California, Mar 1939, (coll. Meinertzhagen), BM(NH) Collection, No. 13081 (slide #1 of 4), deposited in BM(NH); paratypes 27 $\delta\delta$ 57 $\varphi\varphi$, with same data; 1 δ 7 $\varphi\varphi$, *T. dorsale*, Las Vacas, Coahuila, Mexico, UU; Other Material: from *T. rufum*, 1 φ , Urbana, Illinois, NMNH; 1 φ , John's Island, South Carolina, NMNH; 1 φ , Gulfport, Mississippi, NMNH; from *T. curvirostre*, 1 φ , Chihuahua, Mexico, NMNH; 1 φ , Las Vacas, Coahuila, Mexico, UU; from *T. redivivum*, 9 $\delta\delta$ 13 $\varphi\varphi$, Pasadena, California, NMNH. In addition, K. C. Emerson has identified 1 δ 1 φ from *T. rufum*, Columbus, Ohio, and 1 φ from *T. rufum*, Orient, New York, EEM.

Brueelia polyglotta, new species

Figs. 7–9

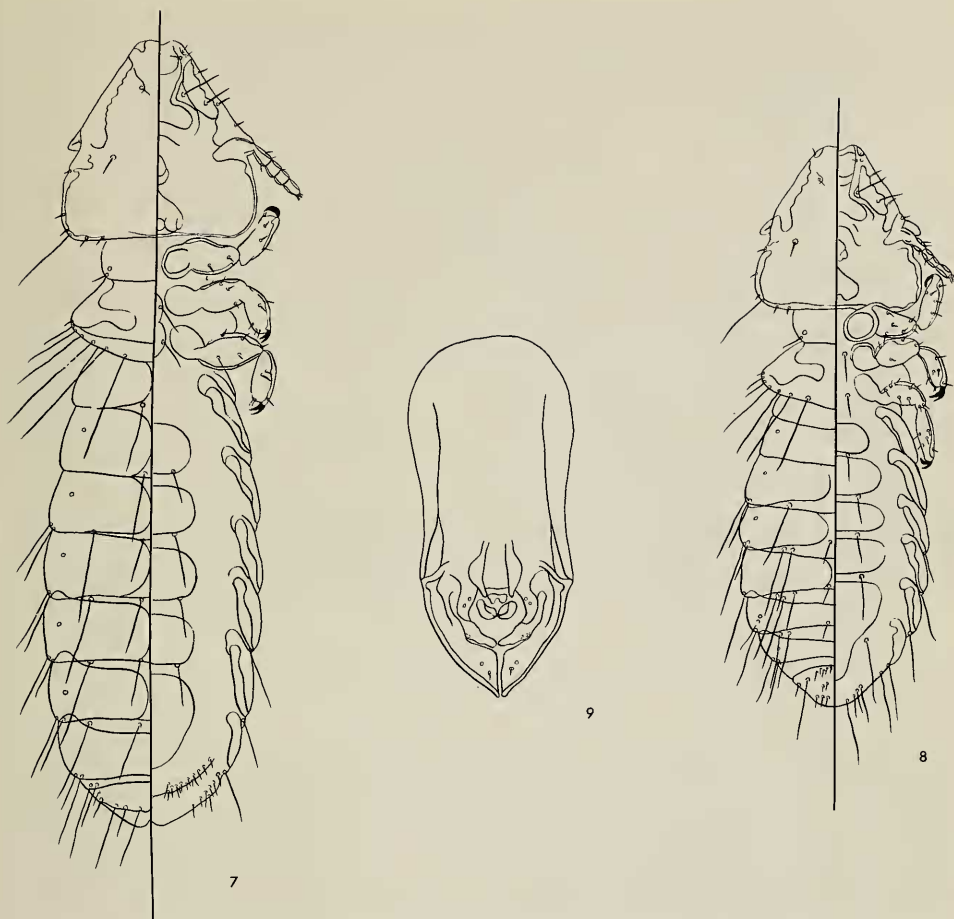
Type host.—*Mimus polyglottos polyglottos* (Linnaeus).

Brueelia polyglotta is distinguished from *B. dorsale* by a broad male genital plate, male genitalia with distal edges of the mesosome without ridges and blunt parameres, and the margin of the female vulval plate with 13 setae of varying diameters on each side.

Dimensions.—Male: Total length, 1.27–1.58 (70:1.39 \pm 0.0070); head length, 0.39–0.45 (70:0.41 \pm 0.0002); head width, 0.38–0.44 (70:0.40 \pm 0.0002); prothorax width, 0.20–0.24 (70:0.23 \pm 0.0001); pterothorax width, 0.32–0.39 (70:0.35 \pm 0.0002); abdominal width, 0.42–0.58 (70:0.50 \pm 0.0007).

Female: Total length, 1.46–1.98 (160:1.64 \pm 0.0102); head length, 0.41–0.48 (160:0.44 \pm 0.0003); head width, 0.39–0.48 (160:0.43 \pm 0.0003); prothorax width, 0.22–0.27 (160:0.24 \pm 0.0001); pterothorax width, 0.33–0.42 (160:0.37 \pm 0.0003); abdominal width, 0.45–0.62 (160:0.52 \pm 0.0012).

Material Examined.—Holotype δ , and allotype φ (first specimen on the right and middle specimen, respectively, as seen under the compound microscope) and paratype φ (first specimen from the left as seen under compound microscope) from *Mimus polyglottos polyglottos*, Fairhope, Alabama, Sep 1930, (coll. Ms. W. M. Edwards), No. 18364 (slide No. 1 of a set of 2), deposited in UMNH; paratypes: 13 $\delta\delta$ 15 $\varphi\varphi$ with same data except Nos. as follows: 18354, 18355 (2 slides), 18357 (2 slides), 18359, 18361, 18363, 18364 (2nd slide), 18366 (3 slides); from *M. polyglottos*, 2 $\delta\delta$, Raleigh, North Carolina, UMNH; 6 $\varphi\varphi$, Sonoro, Texas, UMNH; 9 $\delta\delta$ 11 $\varphi\varphi$, Alachua Co., Florida, UMNH; 5 $\delta\delta$ 1 φ , Savannah, Georgia, UMNH; 1 φ , Nashville, Georgia, UMNH; 1 δ 3 $\varphi\varphi$, James Is., South Carolina, UMNH; 2 $\delta\delta$, Bloomington, Indiana, UMNH; 2 $\varphi\varphi$, Dimmit Co., Texas, UMNH; 1 φ , Jamaica, West Indies; 1 δ 1 φ , Caja de Meurtos, Puerto Rico, UMNH; 2 $\delta\delta$ 2 $\varphi\varphi$, Vieques Island, W.I., UMNH; 6 $\delta\delta$ 14 $\varphi\varphi$, State College, Mississippi, EEM; 2 $\delta\delta$ 2 $\varphi\varphi$, Bloomington, Indiana, EEM; 1 δ , Cromwell, Oklahoma, EEM; 1 φ , New Jersey, EEM; Other Material: from *M. gilvus*, 3 $\delta\delta$ 2 $\varphi\varphi$, near Lethem, Rupununi,



Figs. 7-9. *Brueelia polyglotta*: dorsal and ventral views of (1) female and (2) male, and (3) male genitalia.

British Guiana, BM(NH); 1 ♀, Aguachica, Magdalena, Columbia, BM(NH); from *M. gundlachii*, 15 ♂♂ 46 ♀♀, Mariguana Is., Bahama Is., UMNH; 19 ♂♂ 57 ♀♀, Great Inagua Is., British W.I., UMNH; 1 ♂♂ 3 ♀♀, Ragged Is., B.W.I., UMNH; 1 ♀, Guantanamo, Cuba, UMNH; from *Dumetella carolinensis*, 2 ♀♀, Gamboa, Panama Canal Zone, Panama, UU; 3 ♂♂ 3 ♀♀, Ft. Collins, Colorado, EEM; 2 ♂♂ 2 ♀♀, Orient, New York, EEM; 1 ♂ 1 ♀, Mongohela Co., West Virginia, EEM; from *Melanotis hypoleucus*, 1 ♂ 1 ♀, Huehuetenango, Guatemala, UU; from *Ramphocinclus brachyurus*, 2 ♀♀, St. Lucia, W.I., BM(NH).

Also, from *Mimus longicaudatus*, 6 ♂♂ 5 ♀♀, from Ecuador were identified but not included in the measurements because they were collected from a captive bird for which insufficient collection data were available.

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Literature Cited

- Ansari, M. A. E. 1956. A revision of the *Brueelia* (Mallophaga) species infesting the Corvidae (Part I).—Bulletin of the British Museum (Natural History) Entomology 4:369–406.
- . 1957. A revision of the *Brueelia* (Mallophaga) species infesting the Corvidae (Part II).—Bulletin of the British Museum (Natural History) Entomology 5:143–182.
- American Ornithologists' Union. 1957. Check-List of North American birds. Baltimore. Port City Press. 691 pp.
- Hopkins, G. H. E., and T. Clay. 1952. A check list of the genera and species of Mallophaga. British Museum (Natural History). London. 362 pp.
- , and ———. 1953. Additions and corrections to the check list of Mallophaga.—Annals and Magazine of Natural History (12):6:434–448.
- , and ———. 1955. Additions and corrections to the check list of Mallophaga (II).—Annals and Magazine of Natural History (12)8:177–190.
- Gruson, E. S. 1976. Checklist of the world's birds. New York. Quadrangle. 212 pp.
- Williams, N. S. 1981. The *Brueelia* (Mallophaga: Philopteridae) of the Meropidae (Aves:Coraciiformes).—Journal of the Kansas Entomological Society 54:510–518.
- . 1982. The status of *Brueelia superciliosa* (Mallophaga: Philopteridae).—Journal of the Kansas Entomological Society 55:334.

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